SNOW MICRO SYSTEMS, INC.

P. O. Box 1704
Silver Spring, Maryland 20902

SNOW MICRO SYSTEMS, INC.

Snow Micro Systems, Inc. provides low cost hardware
and software to the personal computer user. Our diversified
line of hardware is designed for club or group construction
projects such as the AMSAT-GOLEM-80 Project (see BYTE Magazine,
September 1979). Our expanding line of software is designed
and priced for the low budget personal computer user.

IMPORTANT

All assembled and tested boards are covered by our
standard 90 day warrantee.

Our bare boards are sold with schematics, layout
drawings and component lists only so that schools, amateur radio
or computer clubs using them for group construction projects and
other technically competent individuals can save money by
assembling the boards themselves. As such Snow Micro Systems,
Inc. warrants that the PC boards are free from physical defects
and known circuit errors.

We cannot troubleshoot home constructed cards over the
telephone (which is why our cards are best used in club projects)
but we will provide a problem identification service for
individually constructed cards (namely, we'll fix board and
solder related problems and identify bad ic's) under the following
conditions.

1. The card is returned to us post paid and packed such that damage in shipping does not occur.

2. The card was constructed using proper construction practices (particularly, resin-core solder and a small tip soldering iron).

3. The post repair warrantee only applies to parts replaced by us.

4. The card be accompanied by a fixed payment of $50.00 (covers labor only) and a written description of problem symptoms.

We strongly recommend that you test all ic's before installing them in order to save time and grief in bringing up a card for the first time. Since our designs incorporate commonly used ic's, your new ones can usually be tested by substituting them into other working cards in your system in place of existing ic's.

SOFTWARE DOCUMENTATION

AMS-80 DEBUG PACKAGE (AMS-80 Version 5.8)

        AMS-80 is a full software debug package and system
I/O drivers including serial ports, a 64 x 16 video card driver
(SSM, Polymorphics and Proc. Tech.) and a parallel input key-
board.   Brief details were published in BYTE magazine, September
1979.   The package is available in the following formats.

AMS-80-D	Documentation (Manual) only (includes source listing). This is 180 pages of information.
AMS-80-NO	Object code on NORTHSTAR disc format.
AMS-80-NSC	Source code on NORTHSTAR disc under CP/M.
AMS-80-CPM	Source code on 8-inch disc under CP/M.
AMS-80-P	Standard AMS-80 on 2708 proms (you may have to change a few bytes to customize it to your system.

        The jump table for the i/o routines is compatable with the
ZAPPLE monitor,   thus CP/M or any other software configured for
ZAPPLE i/o will run through AMS-80 with no modifications.

S-100 HARDWARE

GOLEM-80 FRONT PANEL INTERFACE CARD [FP .01]

        Hardware front panel interface card, allows the contents
of memory locations and I/O ports to be examined and changed.
This card plugs between your S-100 Bus and your panel switches/
display card. The panel display may be in binary, octal or hex
format.

GOLEM-80 S-100 TROUBLESHOOTER [TR .01]

        The S-100 troubleshooter comprises FP.01, and a binary
switch and display panel, interconnected by ribbon cables; a
must for troubleshooting S-100 systems. The two cards may be
mounted as a sandwich on an extender card for use as a portable
test unit, or may be separated and used as a permanent front
panel installation in a home brew system (see BYTE magazine,
September 1978, for details of the Golem-80 project concept).

STATION CONTROLLER CARD [SC .01]

        Seven analog input channels feed through a CMOS selector
(4051B) to a 3½ digit DVM ic used as an Analog to Digital Con-
verter (MC 14433P). The output of which is put into a local
cache memory (74S189) to simplify software readout. Six (6)
industrial quality reed relays are driven (via a 9664 or 75492)
for station control purposes.

        A 3.579 MHz color TV crystal is divided (by a MM5369N)
to feed a hardware time of day clock ic. (MM5318N). This
allows the computer to keep track of time. Provisions for battery

back up are provided. The bus is interfaced by an 8255 and the
usual complement of ic's (8131, 74LS368, and 74LS367).

AMSAT TELEMETRY-RANGE (TRUMP) CARD [TM .01]

        The AMSAT Telemetry-Range Card contains a bi-directional
synchronous/asynchronous serial port (8251A), at 400 Bauds AMSAT
Phase III serial TT&C standard.   [Other rates available using
software settable counter-timer (8253)], Audible tone output
circuit for bell or cw monitor, Vector Interrupt circuitry (8214 /
8212) , and two programmable 8 bit i/o ports (8255).

        S-100 Bus interfaced using standard ic's (8095, 8216
and 8131). Operation of card is controlled by an 82S23 Prom and
jumpers.

        This is the S-100 card for reception of the AMSAT Phase
III spacecraft telemetry and for Synchronous Communications
(see BYTE, "The Sky's the Limit," November, 1978). Note: That
additional external demodulator circuitry will be required to
interface this card to a 145 MHz receiver amateur radio receiver
for AMSAT Phase III satellite reception.

        This card is suitable for interfacing most synchronous and
packet data formats to the S-100 bus providing that any necessary
software drivers and modem circuits are also provided.

        Delivery of TM .01 (assembled version) configured for
AMSAT Phase III will be delayed until March-June, 1980, to ensure
compatability with the spacecraft.

SOFTWARE (NORTHSTAR Format)

AMATEUR RADIO LOGGING PACKAGE [Ham .001]

The Amateur Radio Logging Package contains commands to allow logs to be created, examined, edited and printed. The contents of the logs can be examined by prefix (G, G3, G3Z, G3ZC and G3ZCZ are all valid prefixes) or by dates, or between two dates. Output can be routed to any of the seven (7) devices supported by NORTHSTAR. QSL cards can be printed on label stock based on log entry information. A separate WAS set of commands allows WAS records to be kept for single-multiple band or modes. (Commands are written in NORTHSTAR Basic.)

AMATEUR RADIO CONTEST PACKAGE [Ham .002]

The Amateur Radio Contest Package contains contest programs for the ARRL Sweepstakes as well as a general contest program for other contests. The calls of stations worked (check list) are saved in memory, while the log entries are written to disc in the same format as the log data files in the LOG package. (Commands are written in NORTHSTAR Basic.)

DISC CATALOG PACKAGE [Cat .001]

The disc catalog package sets up a directory convention and contains programs that generate a master catalog file by reading the individual disc directories. The master catalog file can be edited, merged, or sorted into alphabetical sequence. A HELP or INFORMATION file can be placed on each disc providing brief information about the files on the disc. Invisible files (program associated) are allowed for. The contents of the master catalog file can be searched by selective keys (such as

list all files, all files with a particular type number, all
files beginning with a character or group of characters (e.g.
S, STA, STAR, STARTREK, etc.).

        The individual disc directories can be packed to delete
blanks and sorted into alphanumerical order and programs or files
can also be renamed or deleted.   (Commands are written in NORTH-
STAR Basic.)

BASIC OPERATING SYSTEM

        All NORTHSTAR Software packages contain a system
executive program (SYSTEM) that allows Commands (Programs) to be
run by name.   There is no longer any need to enter "LOAD PROGRAM"
and "RUN".   Programs are loaded into memory and executed simply by
entering their name (e.g. "PROGRAM").

        A convention has been defined to name and date the disc,
as follows.   The first entry in the directory is assumed to be the
disc name.   The second entry is assumed to be the date that the
last significant change was made to the disc.   Both of the above
entries are zero length type zero files.   The disc directory is a
type 3 file named <*>, which allows it to be read by programs
written in Basic.   The length of the directory file is four (4) in
Single Density Systems and eight (8) in Double Density systems.
All file names beginning with an * are assumed to be invisible.

        An example of the use of the convention is shown below.

```
LOG.001      0    0 S    0
79-10-08     0    0 S    0
*LOG001    232    2 S    3
*LOG003    237    2 S    3
<*>          0    4 S    3
FILES       40    4 S    2
HELP        32    8 S    2
```

S N O W   M I C R O   S Y S T E M S ,   I N C.

P . O . BOX 1704
SILVER SPRING, MARYLAND 20902
301   622-1931

PRICE LIST AND ORDER FORM

	PRICE	x	QUANTITY	=	TOTAL
HARDWARE					
FRONT PANEL INTERFACE CARD (FP.01)					
bare board, schematic & layout...	$ 45.00	x		=	
kit.............................	$245.00	x		=	
assembled and tested.............	$349.00	x		=	
GOLEM-80 S-100 TROUBLESHOOTER (TR.01)					
bare boards, schematics & layouts.	$ 70.00	x		=	
kit.............................	$329.00	x		=	
assembled and tested.............	$399.00	x		=	
STATION CONTROLLER CARD (SC.01)					
bare board, schematic, & layout..	$ 45.00	x		=	
kit.............................	$245.00	x		=	
assembled and tested.............	$349.00	x		=	
TRUMP CARD (TM.01)					
bare board, 82S23 PROM, & manual.	$ 65.00	x		=	
kit.............................	$250.00	x		=	
assembled and tested as follows, configured for:					
TM.01-A AMSAT PHASE III satellite telemetry reception...:..	$349.00	x		=	
[delivery March-June 1980]					

SOFTWARE

AMS-80 Version 5.8

AMS-80-D	Documentation (includes source listing)	$15	x	=
AMS-80-NO	Object code on NorthStar disc	$10	x	=
AMS-80-NSC	Source code on NorthStar disc (CP/M format)*	$30	x	=
AMS-80-P	Standard code in 2708 Proms	$60	x	=
AMS-80-CPM	Source code on 8" disc (CP/M format)*	$30	x	=
	*CP/M is a trademark of Digital Research,Inc.			
HAM.001	Ham Logging Package	$15	x	=
HAM.002	Ham Contest Package	$20	x	=
CAT.001	Disc Catalog Package	$20	x	=

SUB TOTAL	
Sales Tax	
Add 10% (up to $4.00 maximum), postage & handling	
TOTAL	

NAME: _____

ADDRESS: _____

CITY: _____ STATE_____ ZIP_____